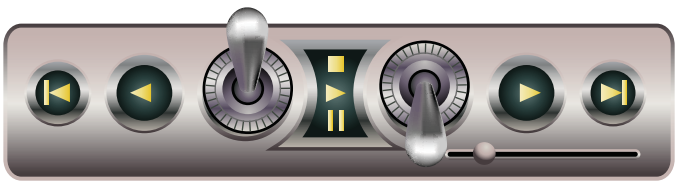
Flight Surgeon Refresher Course

Section 4: Aviation Safety

Risk Management

(FSRC402)



Risk Management

Introduction

Flight operations involve some inherent risk, but caution, common sense and an awareness of the dangers facing aircrews can reduce this danger.

Flight surgeons are responsible for the health and safety of the aircrew and patients under their care. This lesson will show you how to apply the risk management process to flight operations.

Objectives:

a. **Identify the components of risk and society's acceptance**

b. **Define the key terms associated with risk management**

c. **List the five steps of the risk management process**

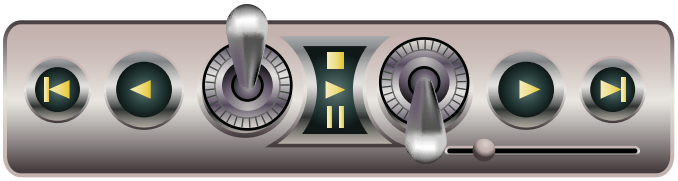
d. **Identify the basic principles of risk management**

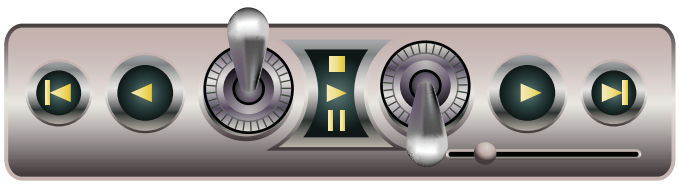
e. **Determine the hazard probability of a risk**

f. **Identify hazard detection resources**

g. **Identify the steps of the deliberate risk management process**

h. **Identify the levels and responsibility of safety**





Background

Military training often involves competing interests:

Realistic training –vs.- Safe training, or "Train like we fight" –vs.- "Safety is paramount." Training as we will fight may not always be practical if the risk outweighs the benefit. This balance is what risk management is all about.

What is risk?

- Chance, hazard, bad consequences or exposure to injury or loss of life
- Risk is defined as the product of probability and severity.
- We must consider the severity of the worst case scenario and the realistic likelihood (probablility) that the event will acutally occur.

What is risk management?

- The process of identifying and controlling hazards to protect the force.
- It is a logical thought process from which users develop tools, techniques, and procedures for applying risk management in their areas of responsibility.
- It is a closed loop process applicable to any situation and environment.

Types of risk:

- Voluntary risk
- Involuntary risk

What are some fundamental precepts of risk management?

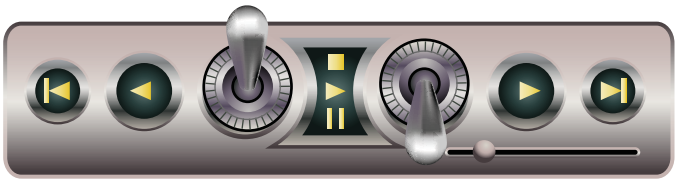
- The greater the risk, the more senior the final decision maker should be. Some risk is often necessary. The risk decision authority must balance operational training needs with required risk.
- When the risk zone is high, everyone from the commander to the individual must be aware of the risk.
- All risk variations that can be controlled, must be controlled.
- Disciplined operations are mandatory.

Did you know?

Wartime accident losses seriously reduce our Army's capabilities to accomplish the mission.

During Desert Shield/Desert Storm one accident inflicted more damage to the U.S. Army than all of Saddam's forces.

The FAASV fire in Doha destroyed the units' capability to perform its mission at a cost of $60 million for the accident.



Risk Management Terms	
Hazard:	Any real or potential condition that can cause injury, illness or death of personnel, or damage to, or loss of equipment or property.
Gambling	Making non-systematic risk decisions.
Exposure	The frequency and length of time subjected to a hazard
Severity	The expected consequence of an event, in terms of degree of injury, property damage, or other mission impairing factors (loss of combat power, adverse publicity) that could occur.
Probability	The likelihood that an event will occur.
Controls	Actions taken to eliminate the hazards or reduce the severity of their outcomes or probability of occurrence.
Countermeasures	Actions taken to counteract danger, threat or hazards
Risk decision	The decision to accept or not to accept the risk(s) associated with an action made by the individual responsible for performing that action.
Risk assessment	The first two steps of the risk management process

Risk Management Process

What is the risk management process?

1. Identify hazards

- Identify the hazards to protect the force.
- Consider all aspects of current and future situations, environment, and known historical problem areas.
- Identify the major events in the operational sequence and the hazards associated with all specified and implied tasks.
- Hazard factors (METT-TC): Mission; Enemy; Terrain and weather; Troops; Time; Civilians.

2. Assess hazards

- Assess hazards to determine risks.
- Assess the impact of each hazard in terms of potential loss and cost based on probability and severity.

3. Develop controls and make risk decisions

- Develop control measures that eliminate the hazard or reduce its risk.
- As control measures are developed, risks are reevaluated until the risks are reduced to a level where benefits outweigh potential cost.

4. Implement controls

- Put controls in place which eliminate the hazards or reduce their risks
- Integrate controls into plans, operations orders (OPORD), standing operating procedures (SOP), training performance standards and rehearsals
- Controls may consist of: Standing operating procedures (SOPs), policy, training, equipment, protective gear, engineering controls

5. Supervise and evaluate

- Enforce standards and controls
- Evaluate the effectiveness of controls and adjust / update as necessary

NOTE: The risk management process is not always understood. Many leaders do the first two steps (identify the hazards and assess hazards) but most do not understand and apply the last three steps of the process.

Risk Management Principles

What are the basic principles of risk management?

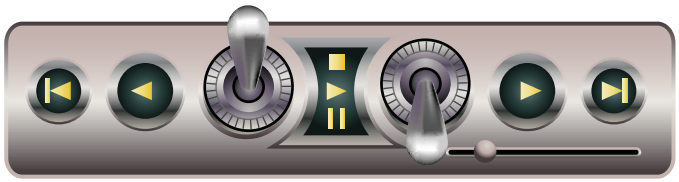
1. **Integrate risk management into planning, preparation, and execution.**
   - It is easier to integrate risk management early in any operation.
   - Risk Management is a philosophy
2. **Make risk decisions at the proper level.**
   - The “proper level” is the level where decision-makers have the maturity and experience to make a good decision.
   - Some risk must inevitably be accepted; insure that the correct decision authority has been identified for the level of risk involved
3. **Accept no unnecessary risks.**
   - The key word is “unnecessary.”
   - An unnecessary risk is one that if not taken, does not contribute meaningfully to the mission.
   - Leaders who take unnecessary risks are gambling.
4. **Accept risks if the benefit outweighs the cost.**
   - Army leaders are in the risk-taking business.
   - There is always risk, and where there is risk, sooner or later there will be an accident, risk management minimizes these accidents.

Assessing Risk

Remember the definition of Risk:

Risk= Probability X Severity

		Hazard Probability				
		Frequent	Likely	Occasional	Seldom	Unlikely
Severity	Catastrophic	extremely high	extremely high	high	high	medium
	Critical	extremely high	high	high	medium	low
	Moderate	high	medium	medium	low	low
	Negligible	medium	low	low	low	low



Hazard Idetification

Use every means available to you to identify potential hazards. What are some hazard detection resources?

- Experience: Traditional “risk management” is based on experience. Since no two individuals share exactly the same experiences the best way to use “experience” is to get more people involved, brainstorm.
- Experts: Consult with acknowledged experts, instructor pilots, safety officers, and maintenance officers / technical inspectors.
- Regulations and manuals: Properly developed regulations incorporate lessons learned, input from subject matter experts, as well as command directives.
- Accident data: The United States Army Safety Center database contains information of more than 250,000 accidents.
- Scenario thinking: Scenario thinking involves visualizing the flow of an operation, the events that take place, and the things that can go wrong.

Hazard Assessment

Once the hazards have been identified, you must indepently assess the probability and severity of each in order to characterize the risk associated with that hazard.

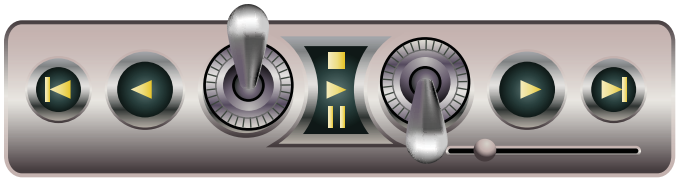
Base these decisions on:

- **Probability:** The likelihood that an event will occur.
- **Severity:** The expected consequence of an event, in terms of degree of injury, property damage, or other mission impairing factors (loss of combat power, adverse publicity) that could occur.

Responsibility for Safety

What are the levels and responsibility of safety?

1. **Command level:**
   - Plan for safety
   - Set safety standard
   - Conduct training consistent with abilities of trainers
   - Resource safety
   - Make risk acceptance decisions when you can’t eliminate the risk
2. **Leader level:**
   - Emphasize adherence to standards and accident prevention
   - Assess and balance risk against training or operational requirements
   - Recognize then eliminate or control, health and safety hazards
3. **Individual level:**
   - Understand individual safety responsibilities
   - Recognize unsafe acts and conditions
   - Perform to standards



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